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Research Article

### ROLE OF REDIVAC SUCTION DRAIN IN HEMITHYROIDECTOMY

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#### Abstract:

*The use of redivac suction drain in hemithyroidectomy is a commonly used practice in the surgery of thyroids in an attempt to avoid seromas and hematomas. A study was carried out in KING Abdul aziz medical city Jeddah in which 200 patients underwent hemithyroidectomy. The purpose of the study was majorly to assess the efficiency of the common suction drain USED in patients who undergo surgery of the thyroid. In this randomized trial, the 200 patients from January 2014 to January 2017 who had thyroidectomy carried on them were then randomly categorized into group 1 (no suction drain) and group 2 drainage group). Operation and post operation results such as operation time, amount of post operation pain determined using the VAS (visual analogue scale), hospital stay, amount of fluid collected on the operation bed was recorded, and other complication were all recorded. The operating time was observed to be similar in both groups. The score of VAS was expressively minimal in the first group as compared to the second. The period the patients stayed at the hospital was shorter in the first group, who also showed more satisfaction. No noticeable variation in the amount of fluid collected for both groups was seen. More patients in Group 2 developed complicated wounds as compared to the Group 1 patients. The conclusion from this study was that suction drain is not a necessary technique. This is because it may lead to complications on the patients, more pain, and increased stay in the hospital.*

**Key Words:** Drainage, Postoperative complications, Post-operation pain, Thyroidectomy.

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**INTRODUCTION:**

Many surgeons use suction drain for their thyroid patients in an attempt to evacuate collected serum and blood as well as obliterate time. The point that the procedure often results to fluid more often strengthens it. Since excessive bleeding can cause deaths, it calls for an immediate reoperation. It is this fear that often makes surgeons to opt for the routine suction drain after their thyroid surgery. A variety of studies have held that clotted blood may block drains such that even if excess bleeding occurs, the surgeons may not be alerted. In addition to this, studies have not shown the advantages of drainage after thyroid surgery.

**COMPARISONS STUDY:**

Comparison studies have been carried out to determine the difference between patients who have undergone a suction drainage after surgery and those that no suction drainage was conducted. In such studies, operating time, amount of postoperative pain, amount of administration for intramuscular analgesic, duration of stay at the hospital, and any other complications (such as bleeding, hypoparathyroidism, wound infection, and hematoma

among others) were all recorded. The operation time was analyzed as the period between the initial procedures to the final placement of seam. Pain after operation was assessed using the VAS on a scale of 0 (no pain felt) and 10 (extreme pain imaginable) on the day of post operation. The amount of analgesics was controlled in accordance with the requirement of the patient and the amount administered was recorded. Those patients who had no complications were discharged as well as that those that needed no more analgesics. A week later, the patients were taken through a physical examination, and this was repeated a month later and three months later. In addition to this, the patients were required to make an overall satisfaction level.

**RESULTS:**

The thyroidectomies carried out on the patients were statistically analyzed. The ration of male to female was 1:7.5. The characteristics of the patients are summarized in figure 1 below, which shows no notable difference in relation to age, histopathological results, gender, or hormonal status between the groups.

**Table 1: Patient characteristics**

	<b>Group 1</b>	<b>Group 2</b>
Age	46.80 (17-82) +/- 12.90	44.33 (20-79) +/- 12.01
Gender (male/female)	21/179	26/174
Type of surgery (Total Thyroidectomy / Lobectomy)	164	172/28
Diagnosis		
Benign	178 (89%)	184 (92%)
Malignant	22 (11%)	16 (8%)
Toxic	24 (12%)	28 (14%)
Non-toxic	176 (88%)	172 (86%)

A similar time of operation was experienced in both groups, with group 1 registering 86.45 (50–120)  $\pm$  18.93 min and 88.80 (45–120)  $\pm$  21.33 min for group 2. It was however observed that the VAS mean score was evidently lesser in Group 1 as compared to Group 2 that is (3.64 (2–7)  $\pm$  1.06 as compared to 4.95 (2–8)  $\pm$  1.05 respectively). It was further

observed that intramuscular analgesic was needed for each of the Group 2 patients while on the contrary only 80% of Group 1 patients required this treatment. The complications seen in the patients were also observed and statistically recorded as seen in Table 2 below

**Table 2: Postoperative Complications**

	<b>Group 1</b>	<b>Group 2</b>
Hematoma	2 (1%)	3 (1.5%)
Seroma	4 (2%)	3 (1.5%)
Wound infection	0 (0%)	1 (0.5%)
Suture reaction	1 (0.5%)	2 (1%)
Transient recurrent nerve praxy	1 (0.5%)	0 (0%)
Persistent recurrent nerve injury	0 (0%)	1 (0.5%)

Transient hypoparathyroidism	8 (4%)	6 (3%)
Persistent hypoparathyroidism	0 (0%)	0 (0%)

The amount of collected fluid was also observed and recorded in both groups. There was however no statistically presentable difference in the fluid collected in both groups. In a likewise, the amount of stay in hospitals was recorded. A statistically noticeable difference between the two Group's duration of stay was seen.

### DISCUSSION:

Suction drains have often been traditionally used in a large number of surgical operations of thyroids, although very limited evidence show that they offer any advantage. Drains are however used based on tradition as opposed to evidence or experience. Traditionally, they were used to prevent complications after the operation by removing lymphatic fluid or hematoma and as a way of informing the surgeon of postoperative bleeding. However, in cases that are not complicated, suction drain should be avoided since it may be of no use because haemostasis is irreplaceable. Research has however gone further to show that drains are often associated with possibilities of infection. In addition to this, it is important to note that techniques for surgical techniques for disorders of the thyroid have in the recent past increased greatly, decreasing mortality rates and postoperative morbidity significantly. This therefore means that such life threatening complications such as hematoma, excessive bleeding, and suffocation or air passage compression can be prevented in many cases. With these improvements therefore, the need for suction drainage is rendered unnecessary.

Suction drainage does not prevent postoperative bleeding and does not, in a likewise, help in its early detection. As mentioned earlier, bleeding may actually occur and still the container remain empty since the blood may clot inside. In addition to this, bandages cannot decrease the hemorrhage risk either. They only keep the blood from collecting, but the blood could dissect the prethyroid muscles, which may result to airway compression. In the Abdul aziz medical city Jeddah case study, there was no fluid collected in thyroid bed, but it was seen in the cases under suction. This therefore means that suction drains produce no benefit. The fluid was most probably caused by the drain since there is an inflammation, which increases its presence. Other than this, suction creates vacuum, which makes it impossible for the lymphatics to seal, hence increasing the drainage. As already mentioned, there is also a possibility of drain and infection of the wound. In addition to this, the Abdul aziz medical

city Jeddah study and a variety of other studies showed that there is close to 50% reduced score in the VAS when no drains are used. This therefore means that suction drain is directly linked to increased amounts of discomfort from pain. This is turn is redirected in the patient satisfaction and hospital stay time and complications. Thyroid surgery that does not incorporate suction drain significantly reduces the stay at hospitals with reduced morbidity of patients.

Adequate techniques for surgery and meticulous hemostasis are the main solutions to avoiding hematoma formation and hemorrhage. A suction drain is only recommended where the case has excess retrosternal goiters or a dead space. Lubin M.et, al (2006) concluded that suction drains being used for the surgery to reduce hematoma does not have any scientific evidence. In the Abdul aziz medical city Jeddah study also, it was observed that suction drain was not significant in reducing the complications associated with disorders of the thyroid. A variety of studies have therefore evidenced that suction drain is not necessary after thyroid surgery.

### CONCLUSION:

In conclusion, it is evident from the various studies that redivac suction drain in hemithyroidectomy is not of significance and therefore not necessary in reducing complications. On the contrary, it instead prolongs the patient stay in hospital, increases the pain, and at the same time increases the risk of infections.

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